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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,564	01/13/2004	Jonathan Borg	HAM-10703/04	1753
25006	7590	06/29/2005	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021			CASTRO, ARNOLD	
			ART UNIT	PAPER NUMBER
			3747	
DATE MAILED: 06/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,564

Applicant(s)

BORG ET AL.

Examiner

Arnold Castro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 04/22/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the Abstract is 189 words long and abstract needs to be limited to 150 words. See MPEP § 608.01(b). Correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 7, 13, 16, 17, is rejected under 35 U.S.C. 102(b) as being anticipated by Rado (US/5,893,349). Rado discloses an engine startup fuel control system for use with an multipoint fuel injection internal combustion engine of the type having at least one combustion chamber, an intake air passage fluidly connected each combustion chamber, a source of fuel (44), a crankshaft and a camshaft sensors (30, 22), said fuel control system comprising: a multipoint fuel injector (44) associated with each combustion chamber, each multipoint fuel injector having an inlet connected to said fuel source and an outlet fluidly connected to said intake air passageway adjacent its associated combustion chamber, a crankshaft position sensor (30) which generates an output signal representative of the angular position of the crankshaft, a camshaft position sensor (22) which generates an output signal representative of the angular position of the camshaft, an engine control unit (12) programmed to determine the

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synchronization of the engine in response to said output signals from said crankshaft position sensor and said camshaft position sensor, said engine control unit having outputs which control the activation of each said multipoint fuel injector, said engine control unit programmed to vary the activation of said multipoint fuel injectors after the determination of engine synchronization to achieve a predetermined air/fuel mixture in each of said combustion chambers.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 5, 6, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rado in view of Condemine, Eric US 20040216719 A1

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6. Rado applies as in claims 1, 13 above but does not expressly state the crank and cam positions are stored when engine is shutoff.

Condemine discloses a multipoint fuel injected engine where in fuel is injected into the intake prior to stopping and the piston. The resting piston location of said cylinder is stored for use in next restart.

At time of invention it would have been obvious to include storing cylinder location as taught in Condemine into the ECU program of Rado.

Motivation would be to rapidly start engine.

7. Claims 2, 3, 8-12 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Rado in view of Condemine further in vie of Nogi et al. (U5/5,894,832).

8. Rado in view of Condemine applies as in claims above but do not disclose the use of a cold start injector.

9. Nogi et al. discloses ah engine startup fuel control system for use with an internal combustion engine of the type having a plurality of combustion chambers, an intake air passage (10) fluidly connected each combustion chamber, a cold stad fuel passageway having an inlet and an outlet, the cold start fuel passageway outlet being fluidly connected to the combustion chambers and a source of fuel, said fuel control system Nogi et al. discloses ah engine startup fuel control system for use with an' internal comprising: a multipoint fuel injector (2) associated with each combustion chamber, each multipoint fuel injector (2) having an inlet connected to the fuel source and an outlet fluidly connected to said intake air passageway adjacent its associated combustion chamber, each said multipoint fuel injector, upon activation, injecting fuel

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into its associated combustion chamber, a cold start fuel injector having an inlet connected to said fuel source and an outlet fluidly connected to the inlet of the cold start fuel passageway, said cold start fuel injector, upon activation, introducing a fuel charge into the inlet of the cold start fuel passageway, processing means for producing a predetermined combustible charge in each combustion chamber during engine startup by selectively activating start multipoint fuel injectors during engine startup to provide fuel to each combustion chamber sufficient to compensate for any transport delay of the fuel charge from the cold start fuel injector inherently the fuel inject will pulse multiple pulses in relation to load of engine through the cold start fuel passageway. The invention includes a crankshaft trigger 11 and wherein said processing means initiates activation of said cold start fuel injector and said multipoint fuel injectors at a predetermined rotational speed of said main shaft determined from said trigger. The ignition comprising a spark ignition system having a spark igniter (4) associated with each combustion chamber, and means for retarding and/or advancing activation of the spark igniter for all combustion chamber during engine startup.

At the time of the invention it would have been obvious to include the cold start injector as taught in Nogi et al. in to the invention of Rado in view of Condemine.

Motivation would have been to aid in cold starting.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold Castro whose telephone number is (571) 272-4839. The examiner can normally be reached on Mon, Tues, Wed, Thurs 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yuen Henry can be reached on (571)-272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Arnold Castro
Examiner
Art Unit 3747

AC


Henry G. Yuen
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